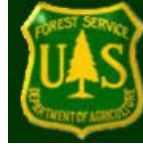




The Norway Rat



History of Invasion

Rat species were unintentionally introduced to North America and Puerto Rico as "stowaways" in the bilges of ships arriving from Europe. The earliest mentioning of rats in Puerto Rico dates back to 1493 and the Black (Roof) Rats that arrived with Christopher Columbus on his second voyage of discovery.

Identification

The Norway rat (*Rattus norvegicus*) is a stocky burrowing rodent. First introduced into the United States from Europe about 1775, the species has now spread throughout the mainland and Puerto Rico. The Norway rat is typically found at lower elevations often near humans habitation. Also called the brown rat, it is a slightly larger animal than the Black (roof) rat (*Rattus rattus*). It has a blunt nose with small ears that are close set and do not reach the eyes when pulled down. The tail is scaly, semi-naked and shorter than the head and body combined. Adult Norway rats weigh an approximately 1 pound (0.4 kilograms). Their fur is coarse and is typically brownish or reddish-gray above, and whitish-gray on the belly.



Rattus norvegicus occurs throughout Puerto Rico's main island.



Rattus norvegicus

Biology and description of problem

Norway rats are primarily nocturnal. They usually become active about dusk, when they begin to seek food and water. Territories of most rats of this

species are within a 50 to 150 foot (15 to 30 meter) radius of the nest. In populations where there are many rats and abundant food and shelter, the territory size will be closer to the lower end of the range. However, when necessary, Norway rats will travel as far as 300 feet (91 meters) in order to obtain food and water.

Norway rats rely on their sense of smell to find food, recognize the odors of pathways, discover members of the opposite sex who are ready to mate, differentiate between strangers and members of their own colony, and to determine if a stranger is strong or weak.

Norway rats use hearing to locate objects to within a few inches. For example, this highly developed sense can pinpoint the sound of someone rolling over in bed to within 6 inches (15 centimeters) of their actual location. The frequency range of their hearing (50 kilohertz or more) is much higher than that of humans (about 20 kilohertz.)

Norway rats have a highly developed sense of touch; they have extremely sensitive body hairs and whiskers that they use to explore their environment. Much of a rodent's movement in a familiar area relies heavily on the senses of touch and smell to direct it to replicate movements learned by exploration and knowledge of its home range. Rodents prefer a stationary object on at least one side of them as they travel and thus commonly move along walls, a fact which is very useful when designing a control program.

Norway rats usually construct nests in below-ground burrows or at ground level. Nests may be lined with shredded paper, cloth, or other fibrous material.

Litters of 6 to 12 young are born 21 to 23 days after conception. Newborn rats are naked and their eyes are closed, but they grow rapidly. They can eat solid food at 2 1/2 to 3 weeks. They become completely independent at about 3 to 4 weeks and reach reproductive maturity at 3 months of age, sometimes as early as 8 weeks.

Female Norway rats may come into heat every 4 or 5 days, and they may mate within a day after a litter is born. The average female rat has 4 to 6 litters per year and may successfully wean 20 or more offspring annually.

This species has overwhelmed the ecological function of the Forest and **is** considered a predator to the native fauna, including endangered and Forest Service sensitive species.

Current Forest Service Research



Researchers from the University of California at Davis, Dr. Desley Whisson, conducted population density studies of the rats on small sites on the Caribbean National Forest. This study was conducted in support of the recovery of the endangered Puerto Rican Parrot. The study found out that the Forest contained a high density of rats, which may play a part in the recovery of the endangered Puerto Rican Parrot. Dr. Whisson recommended useful management actions such as intense dispersal use of ecological compatible rodenticides in bait stations at the critical nesting sites for the birds before the nesting and fledgling seasons. Another suggestion is the monitoring of local population of rats intake of the rodenticide to keep track of the management's effectiveness.

Literature cited

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